



NP *İSTANBUL*
Brain Hospital



NPAMATEM Addiction
Center Presents:

ADDICTION: A Chronic Brain Disease

ADDICTION IN 15 QUESTIONS

Treatment Options in Alcohol
and Substance Addiction

Deep TMS Treatment

Internet Addiction

Gambling Addiction

Codependency



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Why NPİSTANBUL Brain Hospital?

- NPİSTANBUL Brain Hospital is Turkey's first private neuropsychiatry hospital, established to provide effective treatment services for disorders related to mental and brain health using the most advanced treatment methods available in modern medicine.
- NPİSTANBUL Brain Hospital holds accreditation from JCI (Joint Commission International), the world's largest and most prestigious healthcare accreditor. This accreditation is a special certification that, outside of the United States, has been awarded to only three hospitals worldwide, including ours.
- In addition to its services in the field of brain health, the hospital also provides services in neurosurgery, general surgery, neurology, ENT (ear, nose, and throat), internal medicine, pediatrics, and other specialties.
- It is the first private hospital in the field of psychiatry in Turkey to offer comprehensive 24/7 Emergency Psychiatry services with private ambulance support, addressing all the needs of its patients.
- The hospital features Class A operating rooms and intensive care units. It is equipped with Turkey's first and only 1A Ultra Clean operating room system, certified by an independent accreditation body, offering a highly advanced technological infrastructure to support surgical operations.
- It is a pioneer in Turkey of new medical approaches such as "treatment through measuring brain functions" and "Thought-Oriented Medicine."
- It is the first and only hospital in Turkey to adopt and clinically implement the pharmacogenetic approach in diagnosis and treatment processes, including therapeutic drug monitoring (TDM), phenotyping, and genotyping.
- It is the scientific partner of Üsküdar University and engages in various collaborations with the university in technological, academic, and scientific fields.
- It offers neuromodulation treatments, the first of their kind in Turkey. This center aims to treat by measuring brain functions through brain stimulation.
- It provides telepsychiatry (online therapy) services for patients located outside the city or abroad.
- In addition to scientific excellence, it is a hospital focused on healthcare excellence, taking into account "treatment comfort" to positively influence treatment processes.
- As part of its Addiction Clinic (NPAMATEM), it offers services through an Advanced Toxicology Confirmation Laboratory.
- Evidence-Based Treatment is one of its core principles, which includes:
 - Conducting pre- and post-treatment testing
 - Use of biomarkers such as brain mapping
 - Reporting of results



NPİSTANBUL
Brain Hospital



Why NPAMATEM?

- NPAMATEM provides services with a multidisciplinary treatment approach.
- Evidence-based, patient-centered, and individualized treatment is applied.
- Treatment is carried out through the collaborative work of psychiatry, psychology, and social services specialists.
- The treatment team includes leading experts in the field of addiction in Turkey.
- In addition to treatment, preventive services and rehabilitation are also given importance.
- Every treated patient receives medication, individual and group therapy, as well as family and marriage therapy.
- It is the only center in Turkey where co-occurring psychiatric disorders alongside addiction are treated simultaneously in a separate unit.
- The Advanced Toxicology Laboratory uses the most advanced technologies in the world to determine whether the patient has used substances during treatment follow-up.
- The Advanced Toxicology Laboratory is recognized as a reference institution in Turkey.
- After inpatient treatment, treatment planning, follow-up, personalized medication, psychosocial treatment, and rehabilitation continue.
- Medication selection and dosage are adjusted according to the patient's genetic profile.



- Deep TMS (Transcranial Magnetic Stimulation) is a treatment method especially used in addiction therapy.
- Patients can be monitored 24/7, and immediate intervention and hospital transfer can be provided if necessary.
- For the first time in Turkey, within the framework of evidence-based medicine, neuromodulation treatments (Deep Transcranial Magnetic Stimulation - Deep TMS) are being used in the treatment of behavioral addictions such as substance addiction and/or gambling addiction.
- Inpatient treatment options are available for behavioral addictions.
- Through clinical and preclinical research, contributions are made to the national and international medical literature in the field of addiction with publications and articles.
- There is collaboration with many international organizations for education and treatment in the field of addiction.
- Significant contributions are being made to the development of addiction treatment in our country and to the training of professionals in this field. (In cooperation with Üsküdar University BAUMER, a Master's Program in Addiction Counseling and Rehabilitation is offered.)
- In cooperation with the Addiction Psychiatry Foundation, an Addiction Congress is organized for professionals working in the field of addiction in Turkey.
- To improve treatment compliance in addiction therapy, long-acting medications (3-month injections/vaccines) are used.



15 questions about addiction

1- What is addiction and what are the causes?

Addiction is to keep using a substance even it has negative effects on life and health. Another characteristics of addiction is that the individual cannot stop using the substance after he/she started using it. Addiction is a brain disorder and absolutely must be treated.

There are behavioral, social, biological and genetic causes of addiction but none of them, on its own are sufficient to give a proper explanation. Although there are numerous factors contributing to the transformation of substance use into an addiction, it is a biological process in basic terms. The most important factors causing the individual to start using a substance and become an addict are individual's mental state, genetic predisposition, environmental factors, access to substance, family structure, social environment and cultural feature.

2- Who become addicts?

Firstly, it must be stated that all people using substance have the risk of becoming an addict. There is no substance we can safely use. In addition, people who are in search for new things, who easily take risks, people with a degenerate family structure, neglected adolescents, impulsive individuals and people with genetic predisposition are under higher risks.

Adolescents who are impulsive, seek novelty, take risks easily, experience family relationship problems, use substances as a way to cope with stress, and have a genetic predisposition are at much higher risk.

3- How does the addiction develop?

Addiction is a vicious cycle. The individual first take interest in the substance but, at the same time, they are afraid of the substance's effects. If curiosity prevails over fear, the individual who starts using with the thought of "using for one won't harm anyone" assumes that they will never use it again but the expectation never comes true. In the following phase, they denies that they has a problem regarding substance use and presumes that they has control and they can quit whenever they wants. To them, warnings of other people are nothing but exaggerated concerns.

4- What is the age of addiction?

There are numerous studies in many countries conducted with statistical methods regarding the starting age of addiction. In a study performed in Türkiye, 2003, students in elementary and middle schools are included from 6 provinces picked from various geographical regions. This and similar studies indicate that the age of addiction has considerably dropped down.



5- What is the addiction progress?

Individuals having substance abuse problems, start to take more of these substances than they intend. They are continuously engaged in futile efforts to quit or use the substances in a controlled fashion. They spend a lot of time on acquiring, using and getting rid of the effects of substances. Consequently, they neglect their daily tasks. Their attendance to school and academic performance decreases and they have arguments with their family. Their social circle hours, tell lies and spend most of their times in their rooms. Adults, on the other hand, have trouble in the workplace, don't have enough neglect their families and constantly have arguments with them. In addition to all of this, they continue to use substance even though they are aware of the fact that they have physical and psychological problems. They make up their mind time over time to quit but never succeed. And because they didn't succeed, they feel guilt and failure. To get over these feelings, they use more drugs.

6- What is the biological aspect of addiction?

The development of addiction involves several brain regions, including the ventral tegmental area-known as the brain's reward center-the frontal cortex responsible for many functions such as reasoning, decision-making, and impulse control, the amygdala which manages emotions, and learning-related areas like the nucleus accumbens and striatum. At each stage of addiction, changes occur in different parts of the brain. For this

reason, the development of addiction is a highly complex process. Normally, pleasurable stimuli such as art or eating cause an increase in dopamine in the brain's reward center. Substance use also causes a high release of dopamine from the reward center. This released dopamine leads to feelings of pleasure.

Under normal circumstances, individuals have many goals and must choose among them. The emergence of these goals, assigning value to them, and selecting actions are linked to the frontal cortex. An important aspect of addiction is that goal selection often becomes limited to those related to substance use. The dopamine release triggered by substance intake gradually affects the frontal cortex, leading to poor decision-making and restricting chosen actions to substance use alone.

At the same time, dopamine affects brain regions related to learning, such as the nucleus accumbens and striatum, impairing learning abilities. Individuals who develop substance addiction also experience impairments in their ability to learn, store, and recall new information. Repeated and excessive dopamine release disrupts

Addiction is a chronic brain disease.

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natural rewards, preventing enjoyment of normally pleasurable activities like eating and appreciating art or music.

7- Is addiction genetically determined?

Research suggest that some people are predisposed to addiction. How is this possible? Individuals having abnormal genes for some reasons produce abnormal proteins which

results in the production of abnormal enzymes and receptors. These abnormal enzymes and receptors causes irregularities in neurotransmitters located in the pleasure and reward path of the brain. Consequently, this Therefore the development of addiction is a very complicated process. Normally, pleasure inducing stimuli such as art and eating cause the dopamin level to increase, which is located in the reward system of brain. forms the basis of control losses regarding substance use. Therefore, the genetically predisposed individual's use of substance doesn't just cause chemical irregularities but also initiates the process towards addiction. However, today's technology is not advanced enough to conclusively determine who is genetically disposed and who is not. Therefore use of alcohol/substance poses numerous risks.

8- What are the substances causing addiction?

Addictive substances are those that cause chemical or psychological changes when used and can lead to various withdrawal symptoms when use is stopped. Some common addictive substances include: cigarettes, alcohol, ecstasy, heroin, cocaine, synthetic cannabinoids (bonzai), inhalants (bali, glue, gasoline, paint thinners, ether, halothane, etc.), LSD, GHB, certain types of mushrooms, ketamine, anabolic steroids, and methamphetamine.

Not only drugs or stimulants but behaviors such as gambling, internet, computer, phone use, pornography, eating, and shopping can also turn into addictions. The frequency of behavioral addictions is increasingly rising today. All these types of addiction create similar chemical and psychological changes in the person and cause withdrawal symptoms when not engaged in.

Substance addiction prevents individuals from enjoying life.

People who develop substance addiction also experience impairments in their ability to learn, store, and recall new information. Repeated and excessive dopamine release disrupts natural rewarding activities that normally bring pleasure, such as eating and enjoying art or music.

Substance addiction prevents individuals from enjoying life. People who develop substance addiction also experience impairments in their ability to learn, store, and recall new information. Repeated and excessive dopamine release also prevents enjoyment of normally pleasurable activities such as eating and enjoying art or music.

9- The Psychological Aspects of Addiction:

The psychological aspect of addiction includes the mental and emotional effects caused by a substance or behavior, as well as the psychological processes associated with addiction. Addiction is a complex condition involving both physical and psychological dimensions. Here are some of its psychological aspects:

Psychological Dependence Through Pleasure and Reward: Addictive substances or behaviors affect areas of the brain that operate through the reward system, creating feelings of pleasure and relaxation. Users repeatedly seek the substance or behavior to re-experience these positive emotions.

Triggers and Cravings: Individuals with addiction can be strongly influenced by specific situations, people, or stress-related triggers. These triggers may increase their urge to use the substance or engage in the behavior.

Loss of Control: Addiction can limit a person's ability to control their use of the substance or behavior. Even when a person decides to quit, they may struggle to carry out that decision.

Psychological Escape: Addiction may serve as a coping mechanism for dealing with psychological issues such as challenges, stress, anxiety, or depression. This can lead the person to seek the temporary relief provided by the substance or behavior.

Addiction is a difficult illness. Coping with it requires professional support and treatment. Therapies, support groups, and counseling can be effective in managing the psychological aspects of addiction. Seeking professional help can support individuals with addiction in leading a healthier and more balanced life.

10- What behaviors lead to addiction?

The risks involved in the development of addiction can vary depending on various factors and may differ from person to person. We can define the risk factors for the development of addiction as follows:

Genetic Predisposition: Genetic factors can influence a person's risk of developing an addiction. If there is a family history of addiction problems, the likelihood of an individual being prone to addiction may increase.

Environmental Influences: The environment in which a person is raised can affect their risk of addiction. Growing up in a setting where substance use or addiction is present-especially within the family-can heighten this risk.

Early Exposure: Early contact with addictive substances or behaviors can increase the risk of addiction. Starting substance use at a young age raises the likelihood of developing an addiction.

Emotional Problems: Emotional issues such as anxiety, depression, or post-traumatic stress disorder may lead a person to attempt to cope with these problems through addiction.

Mental Health Disorders: Individuals with mental health disorders may be at higher risk for addiction. For example, conditions such as bipolar disorder or schizophrenia can increase the risk of developing an addiction.

Social Pressures: Pressure from friends, coworkers, or one's social environment can lead a person toward using a substance or engaging in an addictive behavior.

Lack of Self-Confidence: Insecurity, stress, low self-esteem, and emotional distress can drive individuals to use substances or behaviors in search of temporary relief or a sense of self-worth, which addiction may seem to provide.

Physical Pain and Injury: Chronic pain or physical injuries can lead to the misuse of prescribed painkillers or even result in addiction.

The risk factors for addiction vary from person to person, and multiple factors may combine to contribute to its development. Preventing or treating addiction begins with recognizing these risk factors and taking appropriate measures. Professional help and support play a crucial role in reducing the risk of addiction and in coping with it effectively.

Parent attitudes have a significant role in the development of addiction.

A mother who takes antianxiety drugs everytime she is upset, and a father that chain-smokes when he gets angry wouldn't do much good for their children in dealing with stress. Children copycat the behaviours of the parents which they see as role models, thus when they face a problem they use the behavioral patterns which they are copying.

11- What are the psychiatric disorders accompanying substance use?

a- Substance Use and Psychosis

Nicotine, alcohol and psychostimulant substances are the most used substances which the psychotic patients use. Several studies showed that 70% of the schizophrenic patients smoke, more than 30% use alcohol and more than 20% smoke weed. When they are asked, most of them say that they use it for self-medication. They say that use

alcohol for its relaxing effect and smoke weed to “shake off unpleasant moods” On the other hand it is known that in cannabis and its derivatives plays an important role in the development of psychotic disorders in predisposed individuals. It is a known fact that stimulants such as LSD, Methamphetamine, Cocaine, Ecstasy cause hallucinations.

b- Substance Use and Depression

One fourth of the individuals diagnosed with major depression are also diagnosed with substance use disorder. It is also known that the individuals started using alcohol and other substances at early ages are more likely to suffer from depression in future periods when compared with individuals who don't use. There may be some similarities in symptoms between the deprivation period of substance use and depression, so it is possible that this diagnosis may be overlooked. Additionally the depression of individuals who use substance frequently accompanied by anxiety and insomnia. The combination of substance use and depression poses a great risk regarding suicide. Therefore, these patients had better be treated as inpatients in the first couple of weeks.

c- Substance Use and Anxiety Disorders

While 30% of women and 20% of men in society suffer from anxiety disorder, this rate is 50% among addicts. Substance use and other psychiatric disorders are interrelated. For instance, 4-5% of substance abusers



Substance use can trigger depression. It is also known that individuals who use alcohol and other drugs at a young age have a higher risk of developing depression later in life compared to those who do not use such substances. There may be similarities between the symptoms that appear during the withdrawal period of the substance and some symptoms of depression, so the diagnosis is often missed.

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d- Substance Use and Adult Attention Deficit Hyperactivity Disorder

It is found out that 20% of the individuals having adult attention deficit hyperactivity disorder also diagnosed with substance use disorder and 50% of them have nicotine addiction. On the other hand, 50% of patients having

alcohol, cocaine or heroin addictions also have attention deficit hyperactivity disorder. Due to the impulsivity and excessive curiosity caused by attention deficit hyperactivity, most of the adolescents tried many substances such as alcohol, cigarette, and weed. In this matter, preventive measures have a particular importance.

e- Substance Use and Eating Disorders

Studies indicates that substance use disorder is related with binge eating disorder but not related with anorexia. Individuals with binge eating disorder, abuse substances such as diuretics and laxatives. Since they think it prevents weight gains, these individuals generally nicotine addiction. Early diagnosis and treatment of children with ADHD is of critical importance in preventing addictions. These young children experiencing attention and concentration disorders have difficulties in complying to the treatment because of the negative effects of the substances they use on their memory and other advanced brain functions. In comparison with individuals who don't have ADHD, their motivation is lower and it is quite difficult for them to continue to their treatment.

f- Sleep Disorders Caused by Substance Use

Insomnia is commonly seen in patients with alcohol or substance use disorders. In these individuals, insomnia may emerge either as a symptom or as a disorder in itself. While alcohol and substance use contribute to sleep irregularities, insomnia can also lead to a relapse in alcohol or substance use through factors such as impulsivity, impairments in executive functions like judgment and decision-making, negative mood, heightened stress sensitivity, and self-medication behaviors. In patients with substance use disorders, primary treatment should focus on addiction, with therapies targeting insomnia and its consequences included as supplementary treatment.

There are many sleep disorders that can be directly associated with physical and/or emotional problems.



The Six Main Types of Sleep Disorders Are:

- Insomnias
- Hypersomnias
- Parasomnias
- Circadian Rhythm Sleep-Wake Disorders
- Sleep-Related Breathing Disorders
- Sleep-Related Movement Disorders

How Are Sleep Disorders Diagnosed?

Various approaches can be used to diagnose sleep disorders and understand what may be causing an individual patient's sleep problems. You may be asked to keep a sleep diary documenting how much sleep you get each night and how often you wake up during the night.

In some cases, an overnight sleep study in a sleep laboratory may be necessary. This method, known as polysomnography, involves monitoring and recording your sleep patterns, oxygen levels, body movements, heart rate, and breathing rhythms using an EEG machine.

Treatment should be individually tailored

In order for each person to be successful and productive in their family, social, and professional life, a treatment plan should be developed that addresses their specific needs and problems. The psychotherapies to be applied and the medications to be used should be selected individually and specifically for each person.

12- What are the principles of Substance Use Therapy?

Principles of Treatment in Substance Addiction

When examining the fundamental principles that should be considered in the treatment of individuals with substance addiction, it becomes clear that there is no single treatment method suitable for everyone. Therefore, the treatment approach to be applied must be tailored to each individual.

-Individualized Approach

In addition, effective treatment should not focus solely on the individual's substance use; it must also address their social, economic, and legal problems.

For treatment to be effective, the individual must be willing to resolve not only issues related to substance use but also other biological, psychological, and social problems.

-Comprehensive

It is very important that individuals with substance addiction who have ambivalent thoughts about treatment have immediate access to treatment the moment they decide to seek help.

-Treatment Must Be Accessible at All Times

Treatment varies depending on the individual's characteristics and the problems related to substance use. The presence of concurrent psychological, occupational, general medical, and social issues in patients makes addiction treatment more challenging.

Substance addiction treatment consists of behavioral therapies (counseling, cognitive therapy, and other psychotherapies), medication, and combinations of these approaches.

A large portion of those who seek treatment do not complete the program, which often leads to relapses.

The treatment of substance addiction is a long-term process in which relapses may occur from time to time and treatments may need to be repeated. As with many other chronic diseases, substance addiction can also flare up occasionally and require intensive treatment.

Both families and patients must understand that relapse is not a failure, but a part of the process.

Psychotherapy practices and behavioral approaches are very important in the treatment of addiction. Counseling services and behavioral methods are highly beneficial for developing problem-solving skills, improving interpersonal relationships, and enhancing functionality within the family and society.

Medications also play a significant role in the treatment process. As previously explained in detail, medications such as naltrexone for opioid addiction and acamprosate for alcohol dependence make a substantial contribution to the treatment process.

Substance Use Again: Relapse

Relapse is when an individual with problems related to drugs and/or stimulants starts using substances again. Relapse is a significant reality that individuals struggling with substance addiction, their loved ones, and professionals involved in addiction treatment eventually have to face. For this reason, preventing relapse developing strategies to cope with the risk of relapse is an essential part of addiction treatment.



In addiction treatment, inpatient therapies are carried out in three ways: biological support programs, relapse prevention, and group therapies

The treatment plan should be adjusted throughout the process based on the patient's needs and deficiencies.

For example, at the beginning of treatment, the patient may not have mentioned any issues with their spouse. If it is later discovered that problems with the spouse are contributing to the frequent relapses, couples therapy should be added to the initially planned treatment

For treatment to be effective, the patient must remain in treatment for a sufficient period of time. Studies have shown that the first three months after quitting substance use are especially critical. A large proportion of individuals who seek treatment experience frequent relapses because they do not complete the treatment program

Counseling services and behavioral approaches are very important in the treatment of addiction. Counseling services and behavioral methods are very beneficial in terms of developing problem-solving skills, relationships with people, and social and family functioning.

Medications play an important role in the treatment process. In addiction treatment, different medications can be used to manage cravings and maintain abstinence

Cleansing the body of the substance (detoxification treatment) is the first stage of treatment, but it is not sufficient on its own for the individual to stay away from the substance. Detoxification treatment aims to cleanse

the body of the substance and to minimize the physical and psychological effects of withdrawal. It is carried out as preparation for the main phase of treatment outpatient care. On its own, it is not enough.

Patients undergoing treatment should be regularly monitored for substance use. It is known that some patients may use substances during the treatment process, even if only experimentally. This should be checked periodically through screening, because if such a situation occurs, it must be addressed during therapy. The underlying reasons should be investigated and appropriately dealt with.

The treatment program should also include the investigation of possible coexisting internal and neurological conditions, and the involvement of relevant medical specialties when necessary. Among individuals with substance addiction, Hepatitis B, Hepatitis C, epilepsy, and cardiovascular diseases are common internal and neurological conditions. A comprehensive treatment program should enable the identification of such conditions and ensure that appropriate specialists are integrated into the treatment plan

The treatment of substance addiction is a long-term process, and relapses may occur from time to time, requiring treatment to be repeated. Like many other chronic illnesses, substance addiction can flare up occasionally and require intensive treatment. Both families and patients must understand that relapse is not a failure, but a part of the recovery process.

Addiction Treatment Is a Long-Term Process

The treatment process is one in which relapses may occur from time to time and treatments may need to be repeated. Like many other chronic illnesses, substance addiction can flare up occasionally and require intensive treatment. Both families and patients must understand that relapse is not a failure, but a part of the process.

Individuals with substance use disorder are at high risk of developing physical illnesses. They may face risks such as cardiovascular and cerebrovascular diseases, hypertension, and, in cases of high doses, even brain hemorrhage and heart attack. Alcohol, on the other hand, impairs liver function and can lead to liver failure.

13- In Which Situations Is Inpatient Treatment Necessary?

- If the patient has not responded well to outpatient treatment and monitoring, and if multiple attempts at outpatient treatment have ended in failure.
- The patient has a history of delirium tremens or other life-threatening withdrawal symptoms that require hospitalization,
- The patient has a general medical condition that could become life-threatening if alcohol or substance use continues during outpatient treatment,
- There are co-occurring mental health disorders with active symptoms related to those conditions,
- The patient poses a risk of harm to themselves or others when placed in a less restrictive environment,
- There is simultaneous abuse of multiple substances.

In such cases, the patient should be treated in an inpatient setting.

In addiction treatment, inpatient therapies are conducted in three main forms: biological support programs, relapse prevention, and group therapies.

14- What Are the Types of Inpatient Treatments?

Biological Support Program and Detoxification Process

Individuals admitted to the hospital undergo a comprehensive biological and psychological evaluation. During this process, detoxification treatment targeting the specific substance used by the patient is initiated as a priority.

Individuals with substance use disorders are at high risk of developing physical illnesses. Substances such as stimulants, which activate the sympathetic nervous system, can increase the risk of cardiovascular and cerebrovascular diseases. It is also well known that alcohol use impairs liver function and can lead to liver failure. For this reason, hospitalized individuals undergo detailed biological evaluations, including cardiac electrocardiography (ECG), monitoring of pulse and blood pressure, and liver and kidney function tests. Consultations from relevant specialties such as internal medicine and neurology are obtained when necessary.

If withdrawal symptoms are present, intravenous access is established to provide fluids and vitamin supplementation. For example, in cases of delirium tremens resulting from alcohol withdrawal, symptoms such as fluctuations in consciousness and life-threatening conditions may occur. In such cases, both biological and psychiatric interventions are initiated immediately

Psychiatric Evaluation and Treatment

During the hospitalization period, the individual is also evaluated for co-occurring psychiatric conditions such as depression, anxiety disorders, panic attacks, paranoia, insomnia, loss of appetite, and others.

When necessary, psychiatric medications are administered with the goals of stabilizing the individual's mental state, reducing cravings for substances, and alleviating withdrawal symptoms.

The Family's Attitude Is Very Important During Treatment

All family members should be united, without division, and speak with one voice by developing a common language. A firm stance, setting clear rules in advance, and ensuring that everyone abides by those rules are key factor

Individual and Group Psychotherapies

The treatment process is not limited to biological interventions alone. Individual psychotherapies and group therapies, which include psychoeducation, are also provided.

These therapies enable individuals to realistically confront their addiction, recognize its harmful consequences, and strengthen their motivation to stay abstinent without relying on addictive substances. Additionally, patients learn effective coping strategies to address emotional and interpersonal problems.

Relapse Prevention Programs and rTMS Applications

One of the most critical phases of substance addiction treatment is preventing relapse. Relapse refers to the individual starting to use substances again. However, not every instance of substance use is considered a relapse; scientific studies have shown that a single use does not necessarily indicate a complete return to addiction.

Therefore, developing strategies to cope with the risk of relapse is essential in the treatment process. To help the patient manage cravings more effectively, repetitive Transcranial Magnetic Stimulation (TMS) therapy may also be applied.

General Aim of Treatment

The goal of all these interventions is to integrate biological treatments, individual and group psychotherapies, and relapse prevention programs. This holistic approach aims to help the individual achieve both physical and mental well-being and to support a sustainable recovery process.





15- What Should the Attitudes of Family Members Toward Addiction Be?

In the follow-up and treatment of individuals with addiction, one of the most prominent issues is the lack of unity within the family. For various reasons, polarization within the family is common. Therefore, all family members must speak with one voice and develop a common language.

Another major issue is the inconsistency in following through with decisions made by family members. Even minimal pressure can lead them to reverse their decisions, which allows the addicted individual to get whatever they want.

Maintaining a firm and consistent stance is one of the most important factors in preventing relapse. Rules should be established in advance, and everyone should

make an effort to adhere to them. In cases of rule violations, no concessions should be made.

Individuals with alcohol/substance or gambling addiction are also typically reward-dependent. For this reason, if their positive behaviors are rewarded and negative behaviors are ignored, they are more likely to continue acting positively in order to receive rewards.

The rewards should not focus on material value, but rather on meeting emotional needs such as shared quality time, or providing materials that support the development of personal skills and hobbies.



I What Is Deep TMS?

Nearly half of individuals with addiction struggle to cope with cravings for alcohol/substance use or gambling despite treatment methods currently included in standard protocols, such as medication, talk therapy, and family therapy.

Craving (the urge to use alcohol/substances or to gamble) is controlled by areas of the brain located deeper within, such as the insula and anterior cingulate cortex, approximately 5-6 cm beneath the surface. Because it is difficult to stimulate these deeper brain regions using traditional TMS (Transcranial Magnetic Stimulation) methods, Deep TMS is used specifically to reduce cravings in addiction patients.

The goal of Deep TMS is to stimulate these deep brain regions through the TMS technique. Recent studies have shown that Deep TMS treatment reduces cravings such as the urge to smoke, drink, use substances, or gamble in individuals with addiction.

Deep TMS not only helps reduce cravings, but also supports recovery by decreasing impulsive behaviors that lead to relapse and improving the ability to make healthy decisions.

HOW IS DEEP TMS ADMINISTERED?

Deep TMS, which is being studied and applied in many centers abroad, was first introduced in Turkey exclusively at NPİSTANBUL Brain Hospital.

Different coil types (such as the H-coil) are used for Deep TMS, and the type of coil and session duration vary depending on the type and severity of the patient's addiction.



On average, the treatment involves 20 to 30 sessions, each lasting approximately 15-20 minutes. After a TMS session, patients can resume their daily activities. The treatment usually lasts 4 to 6 weeks, and is typically administered once a day, including weekends.

Depending on the severity of the addiction and the patient's individual assessments, Deep TMS can also be continued as a maintenance treatment.

In some cases, provocation-based sessions are applied during addiction treatment.

About 60-70% of individuals with addiction also have co-occurring psychiatric disorders such as depression, anxiety disorders, or psychotic disorders. Deep TMS is also effective in treating these coexisting psychiatric conditions alongside addiction.

ARE THERE ANY SIDE EFFECTS OF DEEP TMS?

Compared to other brain stimulation methods, both Deep TMS and conventional TMS are considered very low-risk procedures, as they are non-invasive and do not require surgical intervention. Aside from a mild headache or slight discomfort on the scalp after the session, there are no significant side effects.

3-Month Injection and Implant Treatments in Alcohol and Substance Addiction

Today, alcohol and substance addiction recognized as a chronic brain disorder can also be treated with a method commonly known as an “implant” or, in everyday language, a “chip,” which is placed under the skin.

Considering that patients with alcohol and substance use disorders often have poor medication adherence, implants that remain effective for 3 or 6 months can improve treatment compliance.

In alcohol and substance addiction, the use of effective medications such as naltrexone and disulfiram in implant form aims to help the individual stay away from alcohol or substances for life and maintain long-term sobriety.

The type of implant used varies depending on the substance involved. Implant placement typically occurs about 10 days after the start of alcohol or substance treatment. It is inserted into the abdominal area through a minor surgical procedure, and the medication begins to take effect immediately after the procedure.

Its effects last for approximately 3 months. The goal of the treatment is to reduce the individual’s craving for alcohol or substances, to interact with these substances in a way that causes aversive effects, or to block their action via receptor-level mechanisms, depending on the type of implant used.

Naltrexone Implant

The naltrexone-based implant is placed under the skin in the lower abdominal area through a minor surgical procedure performed under local anesthesia.

Depending on the type of substances previously used by the patient and the characteristics of the medication, the implant releases the drug slowly into the body, remaining effective for 3 to 6 months.

Naltrexone works by binding to and blocking opioid receptors, which are the same receptors activated by substances such as alcohol and heroin.

The goal of the treatment is to prevent the individual from experiencing pleasure when consuming alcohol or opioid-based substances, and to reduce the desire to use them.

Scientific studies have shown that it significantly reduces the likelihood and frequency of relapse.

The type of implant used varies depending on the type of substance involved. Implant placement is typically performed approximately 10 days after the start of substance or alcohol treatment.

Nalmefen Consta

This treatment is administered as an injection every 3 months. It works by binding to the receptor sites in the brain where addictive substances such as heroin, morphine, and alcohol typically bind. By occupying these receptors, the medication prevents the person from experiencing pleasure from the substance. Similarly, the craving for the substance is also reduced through this treatment. Compared to chip/implant treatments, it is easier to administer. It is recommended to repeat the injection at 3-month intervals.

The type of implant used varies depending on the type of substance involved. Implant placement is typically performed approximately 10 days after the start of substance or alcohol treatment.

Disulfiram Implant

This treatment involves the placement of a medication containing disulfiram under the skin in the lower abdominal area through a minor surgical procedure performed under local anesthesia. The drug shows its aversive (repellent) effect through slow release over approximately 3 months. Its mechanism of action is based on inhibiting the enzyme that metabolizes alcohol in the body. When alcohol is consumed while the drug is present in the body, disulfiram interacts with alcohol, causing severe side effects such as nausea, vomiting, headache, palpitations, skin reactions, difficulty breathing, irregular heart rhythms, confusion, and potentially fatal cardiopulmonary failure. The procedure is only carried out after thoroughly informing the patient and their relatives about all possible outcomes of disulfiram/alcohol interaction and obtaining their consent.

Vanoxerine Consta

Used in the treatment of cocaine and methamphetamine addiction, the Vanoxerine Consta injection is administered once every 3 months. It works by preventing the user from experiencing “pleasure” if the substance is used and helps reduce the craving for the drug. This treatment is applied to suitable patients, and continuing it in the following months increases the chances of treatment success.



Excessive use of the internet and computers creates a narcotic-like effect in the brain similar to substance addiction. People who try to stay in front of a computer for 24 hours and prefer to meet their eating, drinking, and other needs at the keyboard eventually experience disruptions in brain chemistry, similar to those seen in substance addicts.

TYPES OF BEHAVIORAL ADDICTION

Internet Addiction

Is Internet Addiction a Disease?

Today, while technology has made our lives easier in many areas, it has also brought along certain problems. The internet is a vital tool for communication and information sharing, frequently used in school, work, and social life.

Internet addiction is a concept that emerged in the 1990s. Although it has not yet been classified under a separate heading in psychiatric diagnostic systems, it has begun to take shape for future classifications. Currently, it is evaluated under Impulse Control Disorders Not Elsewhere Classified. It is known that many behaviors in this group, such as gambling, sex, shopping, and exercising, can lead to addiction.

Criteria for Diagnosing Internet Addiction

Table 1: Young’s Diagnostic Criteria for Internet Addiction

1. Excessive preoccupation with the internet
2. Need for increasing amounts of time spent online



3. Unsuccessful efforts to control, cut back, or stop internet use
4. Withdrawal symptoms when internet use is reduced
5. Staying online for longer periods than originally intended
6. Experiencing problems in relationships, school, or work due to excessive internet use
7. Lying to family members, therapists, or others to stay connected to the internet
8. Experiencing mood changes while being online (such as hopelessness, guilt, anxiety, or depression)

What Situations Indicate That a Person May Be Addicted to the Internet?

Internet addiction can be defined as the presence of multiple negative conditions, such as:

- * Excessive internet use to the extent of losing track of time or neglecting basic responsibilities
- * Withdrawal symptoms including anger and tension when internet use is stopped
- * Development of tolerance and the need to spend more time online

* Lying about internet use

* Social withdrawal

A person addicted to the internet may spend between 40 to 80 hours per week in front of the computer and may remain at the computer for up to 20 continuous hours without a break.

Does the Increasing Use of Social Networks Lead to Internet Addiction?

The rise in social networks can contribute to an increase in internet addiction. For example, people with social phobia who avoid public interaction may become dependent on the internet since there is no face-to-face communication. Similarly, adolescents who are exploring their own world may spend more time in such environments, increasing the risk of addiction. It should also be noted that, nowadays, some marriages experience problems due to internet addiction.



Is Treatment Possible?

It should be noted that a significant number of individuals with internet addiction may also have other underlying psychiatric disorders. Therefore, if such a psychiatric condition is present, it should be treated first. The basic principles are not very different from general addiction treatment. Since the age of onset tends to be lower and it particularly affects children and adolescents during their academic periods, treatment must be conducted quickly and effectively, with close cooperation from the family. Providing necessary information and warnings to both the family and the child about internet addiction is important for prevention.

In many patients, the use of antidepressants helps reduce existing symptoms of depression and anxiety, but it is not sufficient on its own. It is necessary to organize the affected person's life and set boundaries to reduce the time spent online. For example, if someone goes straight to the computer after coming home in the evening, enrolling them in a course that delays their return home, or shifting their morning exercise routine to the evening, can be effective interventions. A program can also be

installed on the computer that automatically shuts it down after a certain time and requires a password unknown to the patient to restart it. The goal is not to completely remove the person from the internet, but to help them use it in a controlled manner.

What Is the Patient Profile Like?

Internet addiction is a condition that can be seen in individuals of all ages and genders. Some studies have shown that the proportion of users who can be classified as internet addicts ranges between 1.98% and 3.5% of all internet users. Additionally, the percentage of users considered at risk for internet addiction ranges between 8.68% and 18.4%.

Unlike substance, alcohol, and gambling addictions, which typically begin at later ages, internet addiction appears to start at an earlier age. The highest risk group consists of adolescents aged 12 to 18. Although it is seen in both genders, it is 2 to 3 times more common in males than in females.



Gambling Addiction

Due to impaired impulse control, its compulsive nature, and clinical and pathological features similar to addiction syndromes, defining gambling addiction can be challenging.

The most widely accepted view is that gambling addiction is a psychological disorder.

Many studies highlight the similarities between substance use and gambling addiction.

While gambling behavior has been examined under the spectrum of neurotic disorders, some perspectives consider pathological gambling to be an addictive behavior. At the core of this addiction is the individual's inability to control their own actions.

The strong comorbidity with alcohol or other substance use disorders supports this view.

Gambling addiction is a heterogeneous disorder that varies in terms of behavior type and severity, psychiatric comorbidity, family history, age of onset, and gender.

What Is Gambling Addiction?

- It can be defined as the inability to resist the urge to gamble despite all the losses it causes in personal, family, and professional life.
- It affects approximately 3% of the population and can occur across all income levels.
- It is more common in men aged 40-50, but is increasingly prevalent among young people.
- Individuals with gambling addiction often also struggle with alcohol and substance abuse.

- There is a high incidence of alcohol and substance addiction in the families of patients. In 25% of cases, one parent is also a gambling addict.

What Is Its Effect?

- Gambling played for excitement makes the person forget everything around them.
- The person feels the need to gamble with increasing amounts of money to experience the desired level of excitement.
- They gamble to escape problems or to relieve unpleasant emotional states (such as helplessness, guilt, restlessness, or feelings of depression).

What Are the Risks?

- Individuals with gambling addiction often hope to win back their losses in a single attempt. When this doesn't happen, they try to cover up their behavior and losses with lies.
- To fund their gambling, they may engage in illegal activities such as fraud, deception, theft, or embezzlement.
- They may risk or lose important relationships, jobs, educational opportunities, or career advancement due to gambling.
- As gamblers become irritable and secretive, their relationships deteriorate. This can eventually lead to depression, suicidal thoughts, and suicide attempts.
- Alcohol and substance addiction are commonly found in individuals with gambling addiction.

Similarity Between Substance Use and Gambling Addiction

Many studies indicate similarities between substance use and gambling addiction. While gambling addiction has been examined under the spectrum of neurotic disorders, some views suggest that pathological gambling is actually an addictive behavior. At the core of the addiction lies the individual's inability to control their own actions.

What Are the Diagnostic Criteria for Gambling Addiction?

- Preoccupation with gambling (e.g., reliving past gambling experiences, planning the next gambling session, or thinking of ways to obtain money for gambling)
- Needing to gamble with increasing amounts of money to achieve the desired level of excitement
- Repeated unsuccessful efforts to control, reduce, or stop gambling
- What Are the Diagnostic Criteria for Gambling Addiction?
- Restlessness or irritability when attempting to cut down or stop gambling
- Gambling to escape problems or relieve dysphoric moods such as helplessness, guilt, anxiety, or depression
- After losing money gambling, returning another day to get even ("chasing" losses)
- Lying to family members, therapists, or others to conceal the extent of gambling

- Engaging in illegal acts such as fraud, theft, embezzlement, or deception to finance gambling
- Jeopardizing or losing significant relationships, jobs, educational or career opportunities due to gambling
- Relying on others for financial help to relieve desperate financial situations caused by gambling. Hoping to win back all losses in one attempt; when that fails, they lie to cover up behaviors and losses. As the addiction worsens, the gambler becomes secretive and irritable, damaging personal relationships. May resort to criminal behavior, write fake checks, drain savings, and accumulate debts. Eventually develop depression, suicidal thoughts, or suicide attempts. Even when realizing they cannot recover their losses, they continue gambling for the thrill and excitement. Typically, individuals seek treatment only in the final stages, often due to relationship breakdowns or legal problems.

The Relationship Between Substance and Gambling Addiction

In the DSM-IV-TR, pathological gambling was classified as an "Impulse Control Disorder Not Elsewhere Classified." However, in the DSM-5, it is now categorized under "Substance-Related and Addictive Disorders." Non-substance-related addiction is a relatively new concept. Studies on both animals and humans show that, whether it's gambling or substance addiction, addiction is a disorder related to the brain's reward system. Functional brain imaging reveals that when individuals with gambling or substance addiction are shown addiction-related images, the same areas of the brain are activated.

Whether it is gambling or substance addiction, addiction is a disorder of the brain's reward system. Functional brain imaging shows that in both gambling and substance addicts, the same areas of the brain are activated when presented with addiction-related images.

DSM-5 Diagnostic Criteria for Gambling Disorder:

- A.** Persistent and recurrent problematic gambling behavior leading to clinically significant impairment or distress, as indicated by four (or more) of the following in a 12-month period:
- Needs to gamble with increasing amounts of money to achieve the desired level of excitement
 - Has made repeated unsuccessful efforts to control, cut back, or stop gambling. Is often preoccupied with gambling (e.g., having persistent thoughts of reliving past gambling experiences, planning the next gambling venture, or thinking of ways to get money to gamble)
 - Becomes restless or irritable when attempting to cut down or stop gambling
 - Gambles when feeling distressed (e.g., helpless, guilty, anxious, or depressed)
 - After losing money gambling, often returns another day to try to get even ("chasing" losses)
 - Lies to conceal the extent of involvement with gambling
 - Has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling

- Relies on others to provide money to relieve desperate financial situations caused by gambling

B. The gambling behavior is not better explained by a manic episode.

The diagnostic criteria remain the same as in the DSM-IV-TR, with a few minor wording changes in DSM-5.

Wording changes in DSM-5:

The criterion involving engaging in illegal acts such as fraud, deception, theft, or embezzlement to finance gambling has been removed. This behavior is now considered to be covered under the criterion about lying to conceal the extent of gambling. These revisions and the reclassification of gambling disorder aim to bring renewed attention to the issue, increase awareness, and reduce stigma associated with the diagnosis.



Codependency

Addiction, one of today's most significant public health issues, has introduced many different concepts and conditions into both the healthcare field and daily life.

One of these concepts "codependency" remains a topic of ongoing discussion.

The foundations of the concept of codependency were laid in the 1960s in the United States, when families of individuals attending Alcoholics Anonymous formed support groups. This led to the recognition of alcoholism as a "family disease." Through addiction treatment and work with families, the emerging idea was that the problem does not originate solely from the addicted individual, but that their interactions with close family members also play a significant role in the addiction.

So what is this interaction, really?

There is often a spouse, a parent, or a friend in the immediate environment of the addicted individual. While communication with close ones can be the most effective resource during the treatment process, if this interaction is not well-managed, it can become one of the main factors contributing to the continuation of the addiction.

The unhealthy and inappropriate behaviors that emerge during the caregiving process provided by loved ones to the addicted person lay the foundation of codependency.

After a while, codependent individuals begin to live through the illness of the addicted person, organize all aspects of their lives around them, and in short, put their own lives on hold and exist only in relation to the addicted person.



On the other hand, a positive concept like a sense of responsibility can turn into excessive responsibility, leading to different problems. Codependent individuals, with obsessive behaviors developed at a compulsive level, fail to recognize their own losses and sacrifices made during the caregiving process for the patient. A common phrase often heard in clinics, "If they are well, then I am well," is actually an example of this situation. However, healthy communication and empathetic care can only arise through mutual empowerment.

The interaction that the addicted individual has with those around them plays an important role in addiction. Communication with close ones can be the most effective resource during the treatment process, but if this interaction is not well-managed, it becomes one of the main factors contributing to the continuation of the illness. Unhealthy and inappropriate behaviors that emerge during the caregiving process provided by loved ones form the foundation of codependency.

The network of close relatives surrounding an individual also plays a significant role in addiction. Interactions between the addicted individual and those around them are crucial. While communication with loved ones can be the most effective resource for the treatment process, poor management of this interaction can also be one of the most significant factors contributing to the continuation of the illness. Unhealthy and inappropriate behaviors that emerge during the care provided by relatives to the addicted patient form the basis of codependentness.

In codependent relationships, issues such as privacy problems, dysfunctional communication, blurred boundaries, and often high reactivity are observed. A relationship develops where one individual enables the other's addiction or irresponsibility, providing disproportionate support or control with the expectation of resolving the problem.

The codependent person puts their own life on hold out of a desire to heal their addicted loved one. The most appropriate treatment approach involves providing adequate support to the addicted individual while simultaneously maintaining interpersonal boundaries. A codependent person who neglects their own needs cannot effectively meet the real needs of their addicted loved one or positively contribute to their treatment.

Codependent individuals often find themselves in supportive or rescuing roles in their relationships with the addicted person.

This rescuing role is actually sustained by the addicted individual's poor functioning. Therefore, the codependent

person develops a dependency on the addicted person's impaired functioning. Their minds are constantly occupied with the needs of the addicted individual. Often, this interaction which the codependent may be unaware of or find difficult to change can lead to negative outcomes for both parties, contrary to expectations.

Common characteristics frequently observed in codependent individuals include:

- Interpersonal relationships are tense and not stable.
- They have difficulty making individual decisions.
- They carry the fatigue of taking on responsibilities.
- Feelings of burnout and helplessness due to fruitless efforts are observed. All their expectations about life revolve around the well-being of their addicted loved one.
- They tend to restrict their own social life.
- They experience intense anxiety when the addicted person's condition fluctuates.
- They feel compelled to meet the addicted person's needs, which results in neglecting their own needs.
- Denial and poor self-esteem are present.
- It should be remembered that relationships require sacrifices in various areas, but these sacrifices should be made without neglecting one's own physical and mental needs and should not reach an unhealthy or destructive level.
- Just as addiction has treatment options, there are also various treatments for codependency.
- Treatment of the codependent individual does not necessarily require the addicted person's treatment to be ongoing.
- Although treatment standards are not yet clearly

defined, individual psychotherapy methods, family therapy, medication, and support groups play an important role in treatment.

- In treatment processes that do not progress suitably and harmoniously, codependent individuals may develop various psychiatric conditions such as depression, anxiety disorders, substance abuse, eating disorders, psychosomatic complaints, interpersonal problems, and risk of addiction.

So, what is this network exactly?

Around the addicted individual, there is often a spouse, a parent, a friend, or a close relative. During the caregiving process provided by these individuals to the addicted patient, unhealthy and inappropriate behaviors exhibited by parents and families form the foundations of codependency. Over time, these people begin to live through the addicted person's illness and essentially "exist" through it.

A positive concept like a sense of responsibility can turn into excessive responsibility, leading to different problems. With behaviors developing at an obsessive level, they fail to recognize their own losses and sacrifices made during the caregiving process. However, the foundations of healthy empathy and care must develop at the level of conscious awareness.

In codependent relationships, issues such as privacy problems, dysfunctional communication and boundaries, and often high reactivity are observed. A relationship emerges where one individual enables, supports, or controls the other's addiction, immaturity, or irresponsibility. Codependent individuals often find themselves in supportive or rescuing roles within the relationship. They are dependent on the other person's impaired functioning to satisfy their own emotional needs. Their minds are preoccupied with the needs of the

addicted individual. Common characteristics frequently seen in codependent individuals include:

- Interpersonal relationships are tense and unstable
- They cannot tolerate being alone
- Feelings of emptiness and boredom are common
- They subordinate their own needs to the other person's demands
- They have a strong desire for acceptance and attachment
- Denial and poor self-esteem are present

It should be remembered that one of the basic requirements of parenting is making sacrifices for the child in various areas, but these sacrifices should be made by appropriately identifying one's own physical and mental needs and ensuring they do not reach an unhealthy or destructive level.

Just as there are treatments for addiction, there are also various treatments for codependency. Treatment of the codependent person does not necessarily require the ongoing treatment of the addicted individual. Although treatment standards are not yet clearly defined, cognitive-behavioral therapies, medication, and support groups play an important role in treatment. In cases where treatment is inadequate, various psychiatric disorders such as alcoholism, drug addiction, eating disorders, psychosomatic complaints, and social phobia may emerge..



"One of the ways to harm a patient is to leave them without treatment."

Prof. Dr. Nevzat Tarhan

TREATMENT OPTIONS WITHIN NP HEALTH GROUP

NP Health Group offers resources to help you and your loved ones understand and address illness. Our fundamental approach is: First, to clarify the diagnosis through comprehensive examination and neuropsychological screening.

Then, to develop a treatment plan using measurement-based methods. Finally, to apply treatment by monitoring brain evidence with robust and effective methods.

1. Our operating rooms and intensive care units, equipped with the latest technology, have the infrastructure suitable for all surgical services, not just neurosurgery.

2. Our imaging systems include a wide range of equipment, including MRI (3 TESLA), Angio CT, intraoperative applications, and mobile X-ray USG.

3. Brain stimulation therapies are applied using the latest methods at our Neuromodulation Center.

4. Psychotherapies: The aim is to eliminate deficiencies

and losses, provide emotional support, impart applicable knowledge and skills for life events, and replace maladaptive behaviors with adaptive behaviors. Neurobiofeedback, EMDR, psychoanalytic psychotherapy, cognitive behavioral therapy, and hypnotherapy are some of the therapy methods offered within NPGRUP.

5. Inpatient Treatments: Inpatient treatment is an effective option in cases where the individual risks their own safety and the safety of their environment, where there is a life-threatening situation, or where there is resistance to treatment.

6. General Medical Process: We offer our infrastructure as a "brain-focused" hospital in connection with general medical services.

7. 3-Month Injection and Vaccine Treatments: Vanoxerin Consta and Nalmefene Consta 3-month injections are administered in our hospital. The medications used vary depending on the type of substance used.

8. Family Information Training: Addiction is a disease that affects not only the user but the entire family. Therefore, the goal of treatment is to change the family as well as the individual. For this reason, trainings are organized for families to both learn about this disease and to learn appropriate behaviors and attitudes to support their loved ones in continuing to quit.

9. Clinical Pharmacogenetics Laboratory (Drug Blood Level and DNA Analysis): In patients using medications, drug blood levels exceeding therapeutic values or drug interactions can lead to impaired brain function. To detect this, the blood levels (TDM) of the drugs used are measured. Identifying drugs according to the genetic profile and monitoring the blood levels of the drugs used increases the chance of treatment success. By identifying unnecessary drugs or those with high side effects in advance, treatment is rationally tailored. DNA analysis is performed if necessary.



10. Electroconvulsive Therapy (ECT): During flare-ups of illnesses, ECT can be performed under anesthesia in the hospital. A seizure is induced by applying a very low electrical current to the brain, and the brain's disrupted electrochemical processes are regulated.

11. Transcranial Magnetic Stimulation (TMS):

This is a new treatment method used in psychiatric and neurological diseases. Through the application of magnetic fields at short intervals to the areas of the brain thought to be affected by the disease, the brain's electrical activity is regulated. It provides faster and more powerful treatment than medications. It is used in our clinics for cases of depression resistant to drug treatment. In some situations where electroconvulsive therapy cannot be applied (patient and family preference, anesthesia risk), it is applied at low frequencies in manic attacks.

12. EMDR: One of the specific psychotherapy techniques developed in recent years is a method called EMDR, which is based on reprocessing generally negative emotions and thoughts related to traumatic experiences in the mind.

13. Hypnotherapy: During hypnosis, interaction with the person's subconscious is carried out, and positive, significant, and lasting changes in life can be achieved in line with the treatment goal.

14. Neurofeedback: In neurofeedback training, information about the brain waves from the person's current EEG is communicated to the person with visual and/or auditory signals, and the person is asked to control certain aspects of this. Depending on the problem or need the person is experiencing, a treatment protocol is arranged according to which region of the brain and which frequency wave needs to be increased/decreased, creating a learning environment. The person sees the connection between their current thoughts and brain waves and learns to control them in the desired direction.

15. Biofeedback: This is a system that visualizes the relationships between a person's bodily sensations and thoughts by measuring body temperature, skin resistance, respiratory rate, muscle tension, and heart rate with special electrodes.

16. Biofeedback-Assisted Virtual Reality Therapy:

In psychotherapy, biofeedback-assisted virtual reality therapy brings anxiety-provoking stimuli from the outside world into the therapy room. While the person experiences the anxiety-provoking situation through virtual reality glasses, changes in the autonomic nervous system are monitored moment by moment thanks to the biofeedback method. This helps the person confront and cope with their fears, anxieties, and obsessions.



NPİSTANBUL BRAIN HOSPITAL

Yamanevler Mah. Ahmet Tefik İleri Cad.
No:18 34768 Ümraniye / İstanbul
T: 0216 633 06 33 F: 0216 634 12 50
www.npistanbul.com bilgi@npistanbul.com

ÜSKÜDAR UNIVERSITY DENTAL HOSPITAL

Yamanevler Mah. Site Yolu Cad.
No: 13-15A 34768 Ümraniye / İstanbul
T: 0216 633 25 25 F: 0216 474 12 59
www.uskudardishastanesi.com bilgi@uskudardishastanesi.com

ÜSKÜDAR UNIVERSITY

Altunizade Mh. University Street
No:14 34662 Üsküdar / İstanbul
T: 0216 400 22 22 F: 0216 474 12 56
www.uskudar.edu.tr bilgi@uskudar.edu.tr



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UNIVERSITY



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